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Sequence Listing was accepted.

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Reviewer: Durreshwar Anjum

Timestamp: [year=2009; month=6; day=12; hr=10; min=34; sec=33; ms=440; ]

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Application No: 10560790 Version No: 3.0

**Input Set:**

**Output Set:**

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**Finished:** 2009-06-03 16:50:54.400  
**Elapsed:** 0 hr(s) 0 min(s) 2 sec(s) 516 ms  
**Total Warnings:** 24  
**Total Errors:** 0  
**No. of SeqIDs Defined:** 24  
**Actual SeqID Count:** 24

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**Input Set:**

**Output Set:**

**Started:** 2009-06-03 16:50:51.884  
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| Error code | Error Description |
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SEQUENCE LISTING

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<130> 10682.10USWO

<140> 10560790

<141> 2005-12-15

<150> PCT/AU2004/000788

<151> 2004-06-17

<150> AU 2003903037

<151> 2003-06-17

<160> 24

<170> PatentIn version 3.3

<210> 1

<211> 187

<212> PRT

<213> Artificial Sequence

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<223> Partial sequence of bovine NC4 domain of Type IX collagen alpha 1 chain

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Pro Arg Phe Pro Val Asn Ser Asn Ser Asn Gly Glu Asn Glu Leu Cys  
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Pro Lys Val Arg Ile Gly Gln Asp Asp Leu Pro Gly Phe Asp Leu Ile  
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Ser Gln Phe Gln Ile Asp Lys Ala Ala Ser Arg Arg Ala Ile Gln Arg  
35 40 45

Val Val Gly Ser Thr Ala Leu Gln Val Ala Tyr Lys Leu Gly Asn Asn  
50 55 60

Val Asp Phe Arg Ile Pro Thr Arg His Leu Tyr Pro Asn Gly Leu Pro  
65 70 75 80

Glu Glu Tyr Ser Phe Leu Thr Thr Phe Arg Met Thr Gly Ser Thr Leu  
85 90 95

Glu Lys His Trp Ser Ile Trp Gln Ile Gln Asp Ser Ser Gly Lys Glu  
100 105 110

Gln Val Gly Val Lys Ile Asn Gly Gln Thr Lys Ser Val Ser Phe Ser  
115 120 125

Tyr Lys Gly Leu Asp Gly Ser Leu Gln Thr Ala Ala Phe Ser Asn Leu  
130 135 140

Pro Ser Leu Phe Asp Ser Gln Trp His Lys Ile Met Ile Gly Val Glu  
145 150 155 160

Arg Ser Ser Ala Thr Leu Phe Val Asp Cys Asn Arg Ile Glu Ser Leu  
165 170 175

Pro Ile Lys Pro Arg Gly Gln Ile Asp Val Asp  
180 185

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<211> 9

<212> PRT

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<223> Type IX collagen alpha 1 chain peptide

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Lys Ser Val Ser Phe Ser Tyr Lys Gly  
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<210> 3

<211> 9

<212> PRT

<213> Artificial Sequence

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<223> Type IX collagen alpha 1 chain peptide

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<210> 4

<211> 10

<212> PRT

<213> Artificial Sequence

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<223> Type IX collagen alpha 1 chain peptide

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Lys Leu Gly Asn Asn Val Asp Phe Arg Ile  
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Arg Ile Glu Ser Leu Pro Ile Lys Pro Arg Gly  
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Gln Ile Asp Lys Ala  
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Thr Phe Arg Met  
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Lys Gly Leu Asp Gly Ser Leu Gln Thr Ala Ala Phe Ser Asn Leu Pro  
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Ser Leu Phe Asp Ser Gln Trp His Lys Ile  
20 25

<210> 10  
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Lys Ile Met Ile Gly Val Glu Arg Ser  
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<223> Cartilage oligomeric matrix protein [Fragment] - bovine

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1 5 10 15

Asp Gln Arg Asn Thr Asp Gly Asp Lys Trp Gly Asp Ala Cys Asp Asn  
20 25 30

Cys Arg Ser Gln Lys Asn Asp Asp Gln Lys Asp Thr Asp Lys Asp Gly  
35 40 45

Arg Gly Asp Ala Cys Asp Asp Ile Asp Gly Asp Arg Ile Arg Asn  
50 55 60

Pro Val Asp Asn Cys Pro Lys Val Pro Asn Ser Asp Gln Lys Asp Thr  
65 70 75 80

Asp Gly Asp Gly Val Gly Asp Ala Cys Asp Asn Cys Pro Gln Lys Ser  
85 90 95

Asn Ala Asp Gln Arg Asp Val Asp His Asp Phe Val Gly Asp Ala Cys  
100 105 110

Asp Ser Asp Gln Asp Gln Asp Gly Asp Gly His Gln Asp Ser Lys Asp  
115 120 125

Asn Cys Pro Thr Val Pro Asn Ser Ala Gln Gln Asp Ser Asp His Asp  
130 135 140

Gly Gln Gly Asp Ala Cys Asp Asp Asp Asp Asn Asp Gly Val Pro  
145 150 155 160

Asp Ser Arg Asp Asn Cys Arg Leu Val Pro Asn Pro Gly Gln Glu Asp  
165 170 175

Met Asp Arg Asp Gly Val Gly Asp Ala Cys Gln Gly Asp Phe Asp Ala  
180 185 190

Asp Lys Val Val Asp Lys Ile Asp Val Cys Pro Glu Asn Ala Glu Val  
195 200 205

Thr Leu Thr Asp Phe Arg Ala Phe Gln Thr Val Val Leu Asp Pro Glu  
210 215 220

Gly Asp Ala Gln Ile Asp Pro Asn Trp Val Val Leu Asn Gln Gly Met  
225 230 235 240

Glu Ile Val Gln Thr Met Asn Ser Asp Pro Gly Leu Cys Val Gly Tyr  
245 250 255

Thr Ala Phe Asn Gly Val Asp Phe Glu Gly Pro Phe His Val Asn Thr  
260 265 270

Ala Thr Asp Asp Asp Tyr Ala Gly Phe Ile Phe Gly Tyr His His Ser  
275 280 285

Ser Ser Phe Tyr Val Val Met Trp Lys Gln Met Glu Gln Thr Tyr Trp  
290 295 300

Gln Ala Asn Pro Phe Arg Ala Val Ala Glu Pro Gly Ile Gln Leu Lys  
305 310 315 320

Ala Val Lys Ser Ser Thr Gly Pro Gly Glu Gln Leu Arg Asn Ala Leu  
325 330 335

Trp His Thr Gly Asp Thr Ala Ser Gln Val Arg Leu Leu Trp Lys Asp  
340 345 350

Pro Arg Asn Val Gly Trp Lys Asp Lys Thr Ser Tyr Arg Trp Phe Leu  
355 360 365

Gln His Arg Pro Gln Val Gly Tyr Ile Arg Val Arg Phe Tyr Glu Gly  
370 375 380

Pro Glu Leu Val Ala Asp Ser Asn Val Ile Leu Asp Thr Thr Met Arg  
385 390 395 400

Gly Gly Arg Leu Gly Val Phe Cys Phe Ser Gln Glu Asn Ile Ile Trp  
405 410 415

Ala Asn Leu Arg Tyr Arg Cys Asn Asp Thr Ile Pro Glu Asp Tyr Glu  
420 425 430

Ala Gln Arg Leu Leu Gln Ala  
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<210> 13  
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<212> PRT  
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<220>  
<223> Odorant-binding protein - bovine

<400> 13

Ala Gln Glu Glu Glu Ala Glu Gln Asn Leu Ser Glu Leu Ser Gly Pro  
1 5 10 15

Trp Arg Thr Val Tyr Ile Gly Ser Thr Asn Pro Glu Lys Ile Gln Glu  
20 25 30

Asn Gly Pro Phe Arg Thr Tyr Phe Arg Glu Leu Val Phe Asp Asp Glu  
35 40 45

Lys Gly Thr Val Asp Phe Tyr Phe Ser Val Lys Arg Asp Gly Lys Trp  
50 55 60

Lys Asn Val His Val Lys Ala Thr Lys Gln Asp Asp Gly Thr Tyr Val  
65 70 75 80

Ala Asp Tyr Glu Gly Gln Asn Val Phe Lys Ile Val Ser Leu Ser Arg  
85 90 95

Thr His Leu Val Ala His Asn Ile Asn Val Asp Lys His Gly Gln Thr  
100 105 110

Thr Glu Leu Thr Glu Leu Phe Val Lys Leu Asn Val Glu Asp Glu Asp  
115 120 125

Leu Glu Lys Phe Trp Lys Leu Thr Glu Asp Lys Gly Ile Asp Lys Lys  
130 135 140

Asn Val Val Asn Phe Leu Glu Asn Glu Asp His Pro His Pro Glu  
145 150 155

<210> 14  
<211> 245  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> human collagen type IX NC4 domain

<400> 14

Ala Val Lys Arg Arg Pro Arg Phe Pro Val Asn Ser Asn Ser Asn Gly  
1 5 10 15

Gly Asn Glu Leu Cys Pro Lys Ile Arg Ile Gly Gln Asp Asp Leu Pro  
20 25 30

Gly Phe Asp Leu Ile Ser Gln Phe Gln Val Asp Lys Ala Ala Ser Arg  
35 40 45

Arg Ala Ile Gln Arg Val Val Gly Ser Ala Thr Leu Gln Val Ala Tyr  
50 55 60

Lys Leu Gly Asn Asn Val Asp Phe Arg Ile Pro Thr Arg Asn Leu Tyr  
65 70 75 80

Pro Ser Gly Leu Pro Glu Glu Tyr Ser Phe Leu Thr Thr Phe Arg Met  
85 90 95

Thr Gly Ser Thr Leu Lys Lys Asn Trp Asn Ile Trp Gln Ile Gln Asp  
100 105 110

Ser Ser Gly Lys Glu Gln Val Gly Ile Lys Ile Asn Gly Gln Thr Gln  
115 120 125

Ser Val Val Phe Ser Tyr Lys Gly Leu Asp Gly Ser Leu Gln Thr Ala  
130 135 140

Ala Phe Ser Asn Leu Ser Ser Leu Phe Asp Ser Gln Trp His Lys Ile  
145 150 155 160

Met Ile Gly Val Glu Arg Ser Ser Ala Thr Leu Phe Val Asp Cys Asn

165 170 175

Arg Ile Glu Ser Leu Pro Ile Lys Pro Arg Gly Pro Ile Asp Ile Asp  
180 185 190

Gly Phe Ala Val Leu Gly Lys Leu Ala Asp Asn Pro Gln Val Ser Val  
195 200 205

Pro Phe Glu Leu Gln Trp Met Leu Ile His Cys Asp Pro Leu Arg Pro  
210 215 220

Arg Arg Glu Thr Cys His Glu Leu Pro Ala Arg Ile Thr Pro Ser Gln  
225 230 235 240

Thr Thr Asp Glu Arg  
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<210> 15  
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<212> PRT  
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<220>  
<223> human alpha (IX) chain precursor

<400> 15

Met Lys Thr Cys Trp Lys Ile Pro Val Phe Phe Phe Val Cys Ser Phe  
1 5 10 15

Leu Glu Pro Trp Ala Ser Ala Ala Val Lys Arg Arg Pro Arg Phe Pro  
20 25 30

Val Asn Ser Asn Ser Asn Gly Gly Asn Glu Leu Cys Pro Lys Ile Arg  
35 40 45

Ile Gly Gln Asp Asp Leu Pro Gly Phe Asp Leu Ile Ser Gln Phe Gln  
50 55 60

Val Asp Lys Ala Ala Ser Arg Arg Ala Ile Gln Arg Val Val Gly Ser  
65 70 75 80

Ala Thr Leu Gln Val Ala Tyr Lys Leu Gly Asn Asn Val Asp Phe Arg  
85 90 95

Ile Pro Thr Arg Asn Leu Tyr Pro Ser Gly Leu Pro Glu Glu Tyr Ser  
100 105 110

Phe Leu Thr Thr Phe Arg Met Thr Gly Ser Thr Leu Lys Lys Asn Trp  
115 120 125

Asn Ile Trp Gln Ile Gln Asp Ser Ser Gly Lys Glu Gln Val Gly Ile  
130 135 140

Lys Ile Asn Gly Gln Thr Gln Ser Val Val Phe Ser Tyr Lys Gly Leu  
145 150 155 160

Asp Gly Ser Leu Gln Thr Ala Ala Phe Ser Asn Leu Ser Ser Leu Phe  
165 170 175

Asp Ser Gln Trp His Lys Ile Met Ile Gly Val Glu Arg Ser Ser Ala  
180 185 190

Thr Leu Phe Val Asp Cys Asn Arg Ile Glu Ser Leu Pro Ile Lys Pro  
195 200 205

Arg Gly Pro Ile Asp Ile Asp Gly Phe Ala Val Leu Gly Lys Leu Ala  
210 215 220

Asp Asn Pro Gln Val Ser Val Pro Phe Glu Leu Gln Trp Met Leu Ile  
225 230 235 240

His Cys Asp Pro Leu Arg Pro Arg Arg Glu Thr Cys His Glu Leu Pro  
245 250 255

Ala Arg Ile Thr Pro Ser Gln Thr Thr Asp Glu Arg Gly Pro Pro Gly  
260 265 270

Glu Gln Gly Pro Pro Gly Pro Pro Gly Val Pro Gly Ile  
275 280 285

Asp Gly Ile Asp Gly Asp Arg Gly Pro Lys Gly Pro Pro Gly Pro Pro  
290 295 300

Gly Pro Ala Gly Glu Pro Gly Lys Pro Gly Ala Pro Gly Lys Pro Gly  
305 310 315 320

Thr Pro Gly Ala Asp Gly Leu Thr Gly Pro Asp Gly Ser Pro Gly Ser

325 330 335

Ile Gly Ser Lys Gly Gln Lys Gly Glu Pro Gly Val Pro Gly Ser Arg  
340 345 350

Gly Phe Pro Gly Arg Gly Ile Pro Gly Pro Pro Gly Pro Pro Gly Thr  
355 360 365

Ala Gly Leu Pro Gly Glu Leu Gly Arg Val Gly Pro Val Gly Asp Pro  
370 375 380

Gly Arg Arg Gly Pro Pro Gly Pro Pro Gly Pro Pro Gly Pro Arg Gly  
385 390 400

Thr Ile Gly Phe His Asp Gly Asp Pro Leu Cys Pro Asn Ala Cys Pro  
405 410 415

Pro Gly Arg Ser Gly Tyr Pro Gly Leu Pro Gly Met Arg Gly His Lys  
420 425 430

Gly Ala Lys Gly Glu Ile Gly Glu Pro Gly Arg Gln Gly His Lys Gly  
435 440 445

Glu Glu Gly Asp Gln Gly Glu Leu Gly Glu Val Gly Ala Gln Gly Pro  
450 455 460

Pro Gly Ala Gln Gly Leu Arg Gly Ile Thr Gly Ile Val Gly Asp Lys  
465 470 475 480

Gly Glu Lys Gly Ala Arg Gly Leu Asp Gly Glu Pro Gly Pro Gln Gly  
485 490 495

Leu Pro Gly Ala Pro Gly Asp Gln Gly Gln Arg Gly Pro Pro Gly Glu  
500 505 510

Ala Gly Pro Lys Gly Asp Arg Gly Ala Glu Gly Ala Arg Gly Ile Pro  
515 520 525

Gly Leu Pro Gly Pro Lys Gly Asp Thr Gly Leu Pro Gly Val Asp Gly  
530 535 540

Arg Asp Gly Ile Pro Gly Met Pro Gly Thr Lys Gly Glu Pro Gly Lys  
545 550 555 560

Pro Gly Pro Pro Gly Asp Ala Gly Leu Gln Gly Leu Pro Gly Val Pro  
565 570 575

Gly Ile Pro Gly Ala Lys Gly Val Ala Gly Glu Lys Gly Ser Thr Gly  
580 585 590

Ala Pro Gly Lys Pro Gly Gln Met Gly Asn Ser Gly Lys Pro Gly Gln  
595 600 605

Gln Gly Pro Pro Gly Glu Val Gly Pro Arg Gly Pro Gln Gly Leu Pro  
610 615 620

Gly Ser Arg Gly Glu Leu Gly Pro Val Gly Ser Pro Gly Leu Pro Gly  
62